EFFECT OF NADI SODHAN PRANAYAMA & BHRAMRI PRANAYAMA ON SELECTED HEMATOLOGICAL VARIABLES OF OLD AGE PEOPLE

Mr. Sunil Kumar Yadav, Research Scholar,
Dept. of Physical Education, Banaras Hindu University,
Varanasi (U.P).
Mr. Ashwani Kumar, TGT (P & HE),
 Kendriya Vidyalaya, Mugalsarai,
Chandauli (U.P.).

Abstract

The purpose of the study was to find out the effect of nadi sodhan Pranayama & bhramri Pranayama on Selected hematological variables of old age people. To achieve the purpose of these study thirty old age people were selected from Employee in Banaras Hindu University, Varanasi, India, at random and their age ranges from 50 to 60 years and all of them healthy and normal. They were divided in to two groups and designed as Experimental and Control group fifteen old age people each. The experimental groups underwent a six weeks of Nadi sodhan Pranayama & bhramri Pranayama training was given. The control group was not allowed to participate in any of the training programme except their routines. The collected data were analyzed by using analysis of covariance (ANCOVA). The results of the study showed that Nadi sodhan Pranayama & bhramri Pranayama can be an effective training programme to increase the selected hematological variables of old age people.
Keywords: Red Blood Cell (RBC), White Blood Cell (WBC), Mental and Physical.

Introduction

The Sanskrit word prana means 'vital force' or 'cosmic energy'. It also signifies 'life' or 'breath', Ayama means the control of the prana. Hence Pranayama means control of the vital force by concentration and regulated breathing. It is physical, mental, spiritual and cosmic energy. All forms of energy are prana. Pranais usually translated as breath; which moves in the thoracic region absorbing vital energy; yet, this is the only one of its many manifestations in the body. (Ayama means control). So Pranayama is the science of breath control. The movements of the thoracic organs include vertical ascension, horizontal expansion and a circumferential movement.
The word Pranayama consist of two sub words
Prana - means respiration, Ayama – means pause
"Pranayama means, Pause in respiration"
In our body 72000 nadis are present Three nadis are main (Ida, pingla and shushmna) Ida nadi - left nostril Pingla nadi – right nostril Shushmna nadi – junction between these two
Eda nadi- Having cold effect Known as Chandra nadi Responsible for the functioning of excratory system.
Pingla nadi- Having warm effect Known as surya nadi Responsible for the functioning of circulatory and respiratory

systems. Pranayama is an exact science. It is the regulation of breath or control of prana which is the stoppage of inhalation and exhalation that follows after securing that steadiness of posture or seat, Asana. As the Bible states, "Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living being".
Pranayama can be used for therapy. The problem of low and high blood pressure, allergic rhinitis, vasomotor rhinitis, sinusitis, recurrent infections of the upper respiratory tract, chronic headaches, migraine, peptic ulcers, and anxiety states is treated by the many kinds of Pranayama, without the need for asanas.

Nadi sodhan Pranayama
A beautiful breathing technique that helps keeps the mind calm, happy and peaceful. A few minutes of Nadi sodhan Pranayama in a day is best to de-stress the mind and release accumulated tension and fatigue. The breathing technique is named Nadi Sodhan, as it helps clear out blocked energy channels in the body, which in turn calms the mind. (Nadi = subtle energy channel; sodhan = cleaning, purification; pranayama = breathing technique).

Bharmari Pranayama
The mind becomes calm and peaceful. It is beneficial in mental tension, agitation, high blood pressure, heart disease etc.
•If Bhramari practiced regularly during pregnancy it facilitates easy and trouble-free childbirth.
•The mind concentration enhances.
•Helps in paralysis.
•Due to humming sound concentration of the mind is also facilitated. It has a positive effect on whole mind and body and particularly on nervous system.

Methodology

The Statement of the problem is stated as "Effect of Nadi sodhan Pranayama & bhramri Pranayama on Selected hematological variables of old age people".
Subjects for the present study were taken from thirty old age people were selected from Banaras Hindu University Varanasi, India, at random and their age ranges from 50 to 60 years and all ofthem healthy and normal. The study was conducted during the year 2014 the selected subjects were divided into two groups and designed as Experimental group

and Control group fifteen old age people each. The experimental groups underwent a six week of Pranayama training. The control group was not allowed to participate in any of the training programs, except their routines. A qualified physician examined the subjects medically and declared that they were fit for the study. The duration of the training period was six weeks with five days per week. On every day the training was practiced approximately 50 min 60under the instruction and supervision of the investigator. The analysis of covariance (ANCOVA) was applied to find out significant difference if any between experimental and control group. In all cases 0.05 level of significance was utilized to test the significance.

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The data was collected two times in the interval of six weeks. Total six weeks of Pranayama was conducted. Observations for tests were collected prior to the treatment in the form of pre-test then after six weeks of Pranayama practices; observations for second test was collected in the form of post test.

The data was analyzed by applying Descriptive Statistics and Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05.

Analysis of Data and Findings of the Study

The statistical analysis of data collected on thirty old age people and age ranged between 50-60 years, who were associated with different Employee from Banaras Hindu University, is presented in this chapter. Data were collected two times in the interval of six weeks. Total six weeks of Pranayama practices was conducted. Observations for tests were collected prior to the treatment in the form of pre-test then after six weeks of Pranayama practices; observations for second test was collected in the form of post test. The data on selected criterion measures for all the groups were collected under similar conditions.

Results of the study

The results pertaining to analysis of data between Dependent Variables (selected hematological variables) and Independent Variable (Nadi Sodhan Pranayama & Bhramri Pranayama) Descriptive Statistics and Analysis of Co-Variance (ANCOVA) was used. The data pertaining to the results of analysis of old men have been presented through the table No. I - IV.

TABLE 1
DESCRIPTIVE STATISTICS OF EXPERIMENTAL GROUPS AND CONTROL GROUP OF PRE-TEST & POST-TEST IN RELATION TO WHITE BLOOD CELL

		Mean	S. D.	S. E.	Min	Max
WBC Pre Test	Control	7.03	1.76	0.45	4.10	9.10
	Exp.	6.53	1.01	0.26	5.20	8.20
	Total	6.78	1.43	0.26	4.10	9.10
WBC Post Test	Control	6.77	1.45	0.37	4.20	8.60
	Exp.	7.32	0.93	0.24	5.80	8.70
	Total	7.05	1.23	0.22	4.20	8.70

Table -1 reveal that the mean and standard deviation of White Blood Cell of Pre Test (Experimental Group 6.53± 1.01, control Group 7.03± 1.76), Post Test (Experimental Group 7.32 ± 0.92, control Group 6.76±1.45).

TABLE 2
ANALYSIS OF CO-VARIANCE OF THE MEANS OF EXPERIMENTAL GROUPS AND THE CONTROL GROUP IN RELATION TO WHITE BLOOD CELL

S. V.		Sum of Square	d.f.	Mean Square	F ratio
Pre Test	B	1.875	1	1.875	0.905
	W	58.006	28	2.071	
Post Test	B	2.301	1	2.301	1.551
	W	41.546	28	1.483	
Adjusted Post mean	B	6.518	1	6.518	31.037*
	W	5.670	27	0.210	

* F ratio needed for significance at 0.05 level of significance = df (1, 28) = 4.20, df (1, 27) = 4.21

The analysis of co-variance for White Blood Cell indicated that the resultant F-ratio of 0.905 was insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was quite successful. The post-test means of all the two groups yielded an F-ratio of 1.551 which was insignificant at 0.05 level of significance. The F-ratio needed for significance with 1, 28 degree of freedom is 4.20 at 0.05 level of significance. The difference between the adjusted posts means was found significant as the obtained F-ratio was 31.037. The F-ratio needed for significance at 0.05 level of significance was 4.21. Thus, mean significant difference exits between experimental and control group in relation to White Blood Cell.

TABLE 3
DESCRIPTIVE STATISTICS OF EXPERIMENTAL GROUPS AND
CONTROL GROUP OF PRE-TEST & POST-TEST IN
RELATION TO RED BLOOD CELL

Testing Groups		Mean	S.D.	Std. Error	Min.	Max.
Red Blood Cell Pre Test	Control	4.58	0.41	0.10	4.02	5.50
	Exp.	4.61	0.69	0.18	3.45	5.81
	Total	4.59	0.56	0.10	3.45	5.81
Red Blood Cell Post Test	Control	4.42	0.27	0.07	4.06	4.89
	Exp.	5.05	0.78	0.20	3.98	6.80
	Total	4.74	0.65	0.12	3.98	6.80

Table -3 reveal that the mean and standard deviation of Red Blood Cell of Pre Test (Experimental Group 4.61 ± 0.69, control Group 4.58 ± 0.41), Post Test (Experimental Group 5.05 ±0.78, control Group 4.42 ±0.27).

TABLE 4
ANALYSIS OF CO-VARIANCE OF THE MEANS OF EXPERIMENTAL
GROUPS AND THE CONTROL GROUP IN
RELATION TO RED BLOOD CELL

S. V.		Sum of Square	d.f.	Mean Square	F ratio
Pre Test	B	0.005	1	0.005	0.016
	W	9.188	28	0.328	
Post Test	B	2.945	1	2.945	8.547*
	W	9.647	28	0.344	
Adjusted Post Mean	B	2.908	1	2.908	40.38*
	W	1.960	28	0.072	

* Significant at 0.05 level of significance
 F = Ratio needed for significance at 0.05 level of significance
= df (1, 28) = 4.20, df (1, 27) = 4.21

The analysis of co-variance for Red Blood Cell indicated that the resultant F-ratio of 0.016 was insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was quite successful. The post-test means of all the two groups yielded an F-ratio of 8.547 which was significant at 0.05 level of significance. The F-ratio needed for significance with 1, 28 degree of freedom is 4.20 at 0.05 level of significance. The difference between the adjusted posts means was found significant as the obtained F-ratio was 40.38. The F-ratio needed for significance at 0.05 level of significance was 4.21. Thus, mean significant difference exits between experimental and control group in relation to Red Blood Cell.

Reference:
Astrand P-O, Rodhal K, Dahl HA, Stromme SB. (2003) Textbook of work physiology (4th ed.). Windsor: Human Kinetics.
Astrand P.O. and Rodhal K. (1986) Textbook of Work Physiology. New York: McGraw-Hill.
Bompa T.O.(1999), Periodization Training for Sports. Champaign, IL: Human Kinetics; pp. 147–311.
Jonson B.L. and Nelson, J.K. (1996). Practical measurements for evaluation in physical education. London: Macmillan Publishing Co.
Mc Ardle WD, Katch FI, Katch VL, (2006) Essentials of Exercise Physiology. 3rd ed. Philadelphia PA: Lippincott Williams and Wilkins.
Singh V, Effect of yogic breathing exercises (Pranayama) on airway reactivity in subjects with asthma. Lancet. (1990); 335(8702): 1381-83.
Swami, S. S, (1996) Asana Pranayama, Mudra Bandha. Munger, Bihar: U.B.S. Publishers and Distributers.
Verma, J. P. (2009). A Text Book on Sports Statistics, New Delhi, India: Sports Publication.
Wassermann K, Hansen J.E., Sue DY, Stringer WW, BJ ,Whipp, (2005) Principles of exercise testing and interpretation (4th ed.). Philadelphia: Lippincott Williams & Wilkins.
Wilmore J.H. and Costill D.L., (2005) Physiology of Sport and Exercise. 3rd ed. Champaign IL: Human Kinetics.